

P P SAVANI UNIVERSITY

Backlog Examination

December 2022

IDME 1010 Basics of Mechanical and Civil Engineering

Time: 1:00 p.m. To 3:30 p.m.

06.12.2022, Tuesday

Maximum Marks: 60

Instructions:

1. Make suitable assumptions and draw neat figures wherever required.
2. Use of scientific calculator is allowed.

Q - 1	Attempt Any one	[05]	CO	BTL
i)	Explain the use of hand tool and list out the diff. hand tool.	1		2
ii)	Explain the use of power tool and list out the diff. power tool.	1		2
Q - 2 (a)	Explain the construction and working of the locomotive boiler.	[05]	2	2
Q - 2 (b)	Explain double acting reciprocating pump.	[05]	3	3
OR				
Q - 2 (a)	Explain the concept of energy generation using hydro power plant.	[05]	3	3
Q - 2 (b)	What is clutch? Explain any one clutch in detail.	[05]	4	4
Q - 3 (a)	Explain the gas welding process.	[05]	5	4
Q - 3 (b)	Give the brief classification of I.C engine.	[05]	2	4
OR				
Q - 3 (a)	Explain the safety instruments used for welding.	[05]	5	2
Q - 3 (b)	Differentiate belt drive vs Chain drive.	[05]	4	4
Q - 4	Attempt any one	[05]		
(i)	Differentiate between Si. Engine and C.I engine		2	4
(ii)	Differentiate between 2-stroke and 4-stroke engine.		2	4
Q - 5	Attempt following questions (Any Five)	[05]		
(i)	In chain surveying field work is limited to _____		2	3
	a) Linear Measurement only			
	b) Angular Measurement only			
	c) Both Linear Measurement and Angular Measurement			
	d) None of these			
(ii)	What are the instrument used in chain surveying ?		2	3
(iii)	The principle of compass surveying is _____		2	3
	a) Triangulation b) Traversing c) Parallelism d) None of above			
(iv)	The compass box is made of _____		2	3
	a) Iron b) Aluminum c) Brass d) Steel			
(v)	The arrangement of various rooms in the building is known as _____		2	4
	a) Plan b) Elevation c) Section d) Details			
(vi)	The actual size of a modular brick is _____.		4	3
(vii)	The graduated ring and needle are free to move independently in _____		4	3
	a) Surveyor's Compass			
	b) Prismatic Compass			
	c) In both of above			
Q - 6 (a)	Draw the conventional symbols of _____	[05]	2	4
a)	Temple			

- b) Road and Rail level Crossing
- c) Tree
- d) Boundary line
- e) Electric Post

Q - 6 (b) Explain the role of civil engineering. [05] 2 4

OR

Q - 6 (a) Briefly explain the classification of Surveying ? [05] 2 4

Q - 6 (b) An area of 49 cm² of map represents an area of 2401 km². Find scale and R.F of a map. [05] 2 3

Q - 7 (a) What are the difference between optical square and open cross staff. [05] 2 3

Q - 7 (b) Discuss various approximate methods of linear measurements. What are their importance? [05] 2 3

OR

Q - 7 (a) Difference between Prismatic Compass and Surveyor's Compass ? [05] 2 3

Q - 7 (b) Convert the following WCB to RB [05] 2 3

- a) 190°
- b) 260°
- c) 315°

Q - 8 Attempt any one/two. [05]

(i) The details of observed bearings are mentioned below. Find out the included angle and also correct the angle if needed to be corrected. 4 3

LINE	FB	BB
AB	20° 30'	200° 00'
BC	110° 00'	290° 30'
CD	195° 00'	15° 00'
DA	286° 30'	106° 00'

(ii) What are the basic requirements for Building Planning? 4 4

CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create

1.